

broadest 2.5–6 (7) mm. wide; sheaths with erose-scabrous angles; bracts usually exceeding the culm; upper spikes often aggregated; staminate spike not large, often partially hidden by the pistillate, the latter 10–30 mm. long, alternately to rather densely flowered; the rhachis smooth; scales often tinged with color, subtruncate to acute, usually mucronate, rarely muticous or even retuse; perigynia ellipsoidal, 2.5–4.0, mostly 3.0–3.7 mm. long, slenderly substipitate thin and fragile walled, apex acute, often slightly beak-like, straight or slightly oblique, nerves obscure, 15–21; anthers 1.3–2.3 mm. long when dry, 1.7–2.5 mm. long when fresh.—Low woods in mucky or peaty soil, rarely in drier places: Labrador to Connecticut and in the mountains to North Carolina and Tennessee, westward through Ontario and New York to Minnesota and probably to Manitoba.

This species was not recognized by Dewey and Boott, and probably was treated by each of these authors under more than one name. The type of Bailey's *C. laxiflora* var. *varians* must be considered to be that one to which he referred in his original description, namely, the specimen on which his cited synonym, "*C. laxiflora* var. *intermedia* Bailey, Bull. 3. Minn. Nat. Hist. & Geol. Surv. 22, 1887, not Boott" was based. This specimen now in the Bailey herbarium is *C. leptonervia*. Of the specimens in the Bailey herbarium at the time the treatment in Gray's Man. ed. 6 was written, and labelled *C. laxiflora* var. *varians*, five are *C. leptonervia*, one is *C. ormostachya* and two are *C. blanda*. There is therefore no doubt that *C. laxiflora* var. *varians* should be considered synonymous with *C. leptonervia*. The writer cannot follow Mackenzie in reducing *C. leptonervia* to *C. anceps*, as it appears to have no close affinity with that plant, and to be as distinct as any of the species here treated. Besides the difference given in the key the leaves, when fresh, are greener and more plicate than in *C. anceps* and more like those of *C. laxiflora* and *C. blanda*. In central New York *C. leptonervia* commonly inhabits the peaty or mucky soils on the borders of swamps.

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NOTES ON THE FLORA OF WESTERN NOVA SCOTIA

1921.

M. L. FERNALD.

(Continued from page 181.)

CUSCUTA GRONOVII Willd. *C. vulgyruga* Engelm. Am. Journ. Sci. xliii. 338 (1842). *C. Gronovii* α *vulgivaga* Engelm. Trans. Acad. Sci. St. Louis i. 508 (1859); Yuncker. Revis. N. A. and W. I. Cuscuta,

65 (1921). LUNENBURG Co.: wet thickets and swales back of brackish shore of Lahave River, Bridgewater; upper border of cobbly beach, Wentzell Lake.

Var. *vulgivaga* is the typical form of the species as was clearly indicated by Engelmann in publishing it: "It is Willdenow's original *C. Gronovii*, in his Hb. nro. 3160."

***C. GRONOVII*, var. *LATIFLORA* Engelm. Trans. Acad. Sci. St. Louis, i. 508 (1859); Yuncker, l. c. (1921). *C. Saururi* Engelm. Am. Journ. Sci. xliii. 339 (1842). YARMOUTH Co.: thickets and damp shores, Quinan, Argyle and Belleville. A coastal plain variety recorded by Yuncker as extending from Texas to southern Illinois and New Jersey.

All our material of var. *latiflora* from Nova Scotia has large, depressed-globose or oblate capsules, in maturity 4-5 mm. broad, and unusually large seeds, 2.2-3 mm. long. Its corolla and anthers are exactly those of the southern plant and, although Yuncker in his recently published *Revision of the North American and West Indian Species of Cuscuta* excludes *C. Gronovii* (in his key, p. 47) from the group characterized by "Capsule globose, more or less depressed," and places it (p. 48) in the group with "Capsule globose-ovoid to conic or long-beaked," many of the specimens placed by him under this species have definitely depressed-globose capsules like the plant of western Nova Scotia. Similarly, although Yuncker's description of *C. Gronovii* calls for seeds "about 1.5 mm. long," many plants which he has identified have seeds up to 2.3 mm. long. The old corollas of *C. Gronovii* and var. *latiflora* sometimes crown the capsule. In such cases there is great difficulty in distinguishing the plants with depressed-globose capsules from *C. Cephalanthi* Engelm. In the latter species, however, the anthers are smaller and more rounded than in *C. Gronovii*.

MERTENSIA MARITIMA (L.) S. F. Gray, forma ALBIFLORA Fernald, RHODORA, xxiii. 288 (1922). Rocky barrier beach, Markland (Cape Forchu), and very abundant and uniform on the barrier beach at East Jordan.

TEUCRIUM CANADENSE L., var. LITTORALE (Bicknell) Fernald. SHELBURNE Co.: crest of barrier beach, East Jordan.

***Solanum Dulcamara* L., var. *villosissimum* Desv. Pl. Angers, 112 (1818). β . *tomentosum* Koch, Syn. 507 (1838). γ . *marinum* Bab. Man. 210 (1843). *S. littorale* Raab in Flora, ii. 414 (1819).—Much of the material collected in western Nova Scotia, at various stations especially near the coast of Yarmouth, Shelburne and Annapolis Cos., belongs to the variety with velvety or densely pilose foliage.

We have it from various stations in Newfoundland, Quebec, and Massachusetts.

GRATIOLA AUREA Pursh. Common eastward to Annapolis and Lunenburg Cos.

Veronica agrestis L. Waste ground, Dartmouth.

AGALINIS NEOSCOTICA (Greene) Fernald, RHODORA, xxiii. 139 (1921). Many additional stations including some in Shelburne Co.

**A. MARITIMA Raf. *Gerardia maritima* Raf. YARMOUTH Co.: very abundant on the salt marsh along Argyle River, Argyle Head. Heretofore unknown east of York Co., Maine.

UTRICULARIA GEMINISCAPA Benj. Additional stations in Shelburne, Lunenburg and Halifax Cos.

U. MINOR L. Additional stations in Digby Co.

U. GIBBA L. Additional stations, in YARMOUTH Co.: forming a filmy turf in quagmire-margin of Sloane Lake, Carleton. LUNENBURG Co.: forming compact mats in shallow pools at outlet of Hebb's Lake, Bridgewater; peaty quagmire-margin of Frank Lake and of a near-by small pond, Upper Cornwall.

U. PURPUREA Walt. Frequent or common eastward to Hants Co.

U. CORNUTA Michx. A colony in exposed peat and sand by Rhodenisser Lake, Lunenburg Co., is noteworthy on account of its forking stems—with 2 or 3 long branches.

**CONOPHOLIS AMERICANA (L. f.) Wallr. LUNENBURG Co.: dry pine and oak woods on steep slopes along Lahave River, Bridgewater; locally abundant, many stems springing from deep-seated thick bases attached to oak-roots. Freshly bruised plant with a strong odor of cider.

LITTORELLA AMERICANA Fernald. On the shores of Shubenacadie Grand Lake *Littorella* did not flower in 1920, owing to the high water; but in 1921 it formed freely flowering carpets stranded on the sandy and shingly beach.

Plantago lanceolata L. There are two well defined varieties of *Plantago lanceolata* naturalized in America and a second species which has been confused with them. The varieties are distinguished as follows.

Spike at beginning of anthesis narrowly ovoid-conic, tapering to apex; in fruit cylindric and obtuse, 1.5–8 cm. long: leaf-blades 0.5–2.3 dm. long, 0.6–4 cm. broad: scapes up to 8 dm. tall.....*P. lanceolata* (typical).

Spike at beginning of anthesis subglobose, rounded to apex; in fruit subglobose to cylindric and obtuse, 0.5–2.3 cm. long: leaf-blades 0.2–1.2 dm. long, 0.3–2 cm. broad: scapes 0.3–4.5 dm. tall.

Upper leaf-surfaces green, glabrous or sparsely pubescent.

Var. *sphaerostachya*.

Upper leaf-surfaces gray with abundant long hairs.

Var. *sphaerostachya*, forma *eriphora*.

P. lanceolata L. (typical). Generally naturalized from Newfoundland to British Columbia and southward. A locally abundant variant

has the spike branching sometimes with a few, more often with many short and densely crowded branches.

**Var. *sphaerostachya* Mert. & Koch in Roehling, *Deutschl. Fl.* i. 803 (1823). γ . *pumila* Koch, *Syn.* 597 (1837). β . *capitellata* Schultz, *Fl. Pfalz*, 380 (1846). δ . *capitata* Dcne. in A. DC. *Prodr.* xiii. pt. 1: 715 (1852). *P. microcephala* Royle acc. to Barneoud, *Mon. Plant.* 29 (1845), not Poir. *P. sphaerostachya* (Mert. & Koch) Kern. *Schedae ad Fl. exsicc. Austro-Hung.* iv. 71 (1886), not Hegetschw. *Fl. Schweiz*, 116 (1840).—Fields and roadsides, Newfoundland; Nova Scotia; southern New England; California to British Columbia.

**Var. *sphaerostachya*, forma *eriophora* (Hoffmansegg & Link) Beck von Man. *Fl. Nied.-Oesterr.* ii. 1093 (1893). *P. eriophora* Hoffmansegg & Link, *Fl. Port.* i. 423 (1809). *P. hungarica* Waldst. & Kit. *Pl. Rar. Hung.* iii. 225, t. 203 (1812). *P. lanata* Host. *Fl. Austr.* i. 210 (1827). *P. lanceolata* δ . *lanuginosa* Koch, *Syn.* 597 (1837).—Nova Scotia; southern New England; Oregon.

A closely related species, *P. altissima* L. *Sp. ed.* 2, i. 164 (1762); Kern, *Ost. Bot. Zeit.* xxv. 59 (1875); Beck von Man. *Fl. Nied.-Oesterr.* ii. 1093 (1893), was collected by the late H. S. Clark somewhere on the "Connecticut coast" in 1899. The label gives no further information but is sufficient indication that the plant is to be watched for. *P. altissima* is a stouter plant than *P. lanceolata*, with heavy, creeping root, large leaves (up to 4 dm. long and 4 cm. broad) glabrous upon both surfaces; stout scapes 0.6–1. m high; and flowers 6–7 mm. broad (in *P. lanceolata* mostly under 5 mm.).

**CEPHALANTHUS OCCIDENTALIS* L. SHELBURNE Co.: rocky shore of Deception Lake; among granite boulders by Lake John; at both stations scarce and local. Mr. R. H. Wetmore informs me that he has found *Cephalanthus* on Cameron Lake (head of Medway River), Queens Co.

VIBURNUM ALNIFOLIUM Marsh. Rare in YARMOUTH Co.: thickets and mixed woods near Lake George. Becoming frequent in Digby Co. Thence eastward through the northern and central region at least to Halifax Co.

SOLIDAGO LATIFOLIA L. LUNENBURG Co.: shaded ledges by Lahave River above Bridgewater

SOLIDAGO BICOLOR L. SHELBURNE Co.: from Shelburne eastward,

**S. UNILIGULATA* (DC.) Porter, var. *NEGLECTA* (T. & G.) Fernald, *RHODORA*, xxiii. 292 (1922). The plants in a spruce swamp at Markland (Cape Forchu), Yarmouth Co., are thoroughly characteristic of the variety which, in extreme development, we have not had from east of southern Maine.

S. ELLIOTTII \times *RUGOSA*. One colony, apparently of this origin, on a gravelly bank south of Belleville, Yarmouth Co.

S. CANADENSIS × *UNILIGULATA*. One clump, apparently of this origin, in a thicket near Five-River (Morris), Lake Shelburne Co.

S. SEROTINA Ait., var. *GIGANTEA* (Ait.) Gray. Various stations from Yarmouth Co. to Lunenburg Co.

SOLIDAGO TENUIFOLIA Pursh. Many additional stations from Yarmouth and Digby Cos. to Halifax Co.

**ASTER UNDULATUS* L. LUNENBURG Co.: frequent in dry thickets and borders of woods about Bridgewater and northward at least to Wentzell Lake.

**ASTER LINDLEYANUS* T. & G. HANTS Co.: border of old hillside woods, Mt. Uniacke.

**ANTENNARIA PARLINII* Fernald. LUNENBURG Co.: abundant at the border of dry pine and oak woods on steep slopes along Lahave River, Bridgewater.

ANAPHALIS MARGARITACEA* (L.) B. & H., forma ***anochlora, n. f., foliis lineari-lanceolatis supra viridibus glabris sub inflorescentia valde reductis.

Leaves linear-lanceolate, green and glabrous above, much reduced below the inflorescence.—Occasional throughout the range of the typical form. TYPE: dry clearings and burns near Five-River (Morris) Lake, Shelburne Co., Nova Scotia, September 10, 1921, *Fernald & Long*, no. 24,670, in Gray Herb.

Forma *anochlora*, on account of its bright green upper leaf-surfaces, is often sent out as var. *occidentalis* Greene. That variety, of more boreal range than the slender-leaved *A. margaritacea* and forma *anochlora*, has the leaves of more oblong tendency and scarcely reduced in size below the inflorescence. For discussion of it see *RHODORA*, xiii. 25–37 (1911).

Ambrosia trifida L. Waste ground, Dartmouth.

RUDBECKIA LACINIATA* L., var. ***gaspereauensis, n. var., foliis subtus et petiolis et rhachibus pilosis.

Lower surfaces of leaves, petioles and rhachises pilose.—NOVA SCOTIA: alluvial soil in thickets close to shore or on the strand of streams and brooks of the Gaspereau River system, Kings County. The type material collected at the border of an alder thicket by Black River (tributary to the Gaspereau), August 31, 1921, by Prof. *H. G. Perry* (TYPE in Gray Herb.).

This indigenous and isolated Nova Scotian variety differs from the continental plant in the development of long pubescence, typical *R. laciniata* being glabrous or merely scabrous.

COREOPSIS ROSEA Nutt. Additional stations, all in YARMOUTH Co.: Salmon (Greenville) Lake; Goven, St. John (Wilson) and Gil-filling Lakes.

BIDENS CERNUA IN EASTERN AMERICA. *Bidens cernua* L. is a highly variable species with several well defined varieties in northeastern America. It belongs to a group of three species with simple leaves and achenes with a convex cartilaginous summit. These three species may be distinguished as follows.

Mature disk (except in depauperate extremes) 1.3–2.8 cm. broad: fruiting heads often nodding: outer involucre reflexed, spreading or merely subascending: disk-corollas 4–5 mm. long, 5-toothed: anthers exerted, purple-black: achenes not conspicuously striate between the margins and midribs or keels; the central 1.8–2.5 mm. broad.

Achenes straight and flat, not winged nor strongly keeled, deep-brown or purplish; the outer 6–8 mm. long, with marginal awns 2.8–4.5 mm. long; the central 8–9.5 mm. long, with marginal awns 3.5–5 mm. long: stem firm and usually smooth; its rooting base up to 6 dm. long: outer involucre rarely longer than the inner: chaff reddish-tipped: rays 1.5–3 cm. long.....*B. laevis*.

Achenes curved, with almost wing-like pale margins and keels, olivaceous; the outer 3.3–6.3 mm. long, with marginal awns 2–2.8 mm. long; the central 4.2–7.8 mm. long, with marginal awns 2.6–4 mm. long: stem soft and usually somewhat hispid; its rooting base rarely 1 dm. long: outer involucre mostly longer than the inner: chaff yellow-tipped: rays wanting or at most 1.7 cm. long.....*B. cernua*.

Mature disk rarely 1.5 cm. broad: fruiting heads erect: outer involucre ascending: disk-corollas 3.5–4 mm. long, 4-toothed: anthers included, pale: achenes distinctly 7–15-striate on each face; the central 1.4–1.9 mm. broad, flat, olive-brown or drab.....*B. hyperborea*.

Bidens laevis is not specially variable with us; the variations of *B. hyperborea* have recently been discussed;¹ and to round out the treatment of this group the northeastern varieties of *B. cernua* are here considered. Our variations of this species are as follows.

Stems stoutish, 0.25–1 cm. in diameter at base, commonly branching, 0.5–1.8 m. high: leaves sessile or at most narrowed at base, thickish, 0.2–2 dm. long; heads commonly numerous, broadly hemispherical, many-flowered; the primary ones with disks 1–2.7 cm. broad, nodding in fruit: outer involucre of 5–10 bracts; inner of about 8 bracts 6–12 mm. long.

Leaves tapering to long acuminate-attenuate tips; the primary with 4–24 pairs of sharp serrations: bracts of outer involucre linear to lanceolate, acute or acutish.

Leaves with broad connate or subconnate bases, scarcely narrowed below the middle.

Leaves linear to oblanceolate, with 4–13 pairs of coarse teeth 1–5 mm. high.....*B. cernua* (typical).

¹ RHODORA, XX. 146–150 (1918).

- Leaves linear- to lance-oblong, with 12-24 pairs of fine teeth scarcely 1 mm. high.....Var. *integra*.
 Leaves conspicuously narrowed at base, elliptic-lanceolate.....Var. *elliptica*.
 Leaves mostly blunt or round-tipped; the primary ones entire or with 1-6 pairs of remote teeth: bracts of outer involucre oblong to spatulate, with obtuse or rounded tips.....Var. *oligodonta*.
 Stem capillary, simple or only slightly forking, 0.2-2 dm. high: leaves petioled, oblanceolate or spatulate, thin, 0.4-2.5 (rarely -4) cm. long: heads solitary or very few, campanulate, few-flowered, with disks 1.5-10 mm. broad, scarcely nodding in fruit: outer involucre of 2-6 bracts; inner involucre of 3-6 bracts 2-7 mm. long.....Var. *minima*.

B. CERNUA (typical). Sloughs, springs, pools and wet shores, extending northeastward to Chicoutimi, Rimouski and Bonaventure Cos., QUEBEC, MADGALEN ISLANDS and Cape Breton, NOVA SCOTIA; Eurasia.

In Nova Scotia unknown from west of Annapolis and Lunenburg Cos.

**Var. *INTEGRA* Wiegand, Bull. Torr. Bot. Cl. xxvi. 418 (1899).—PRINCE EDWARD ISLAND; Cape Cod, MASSACHUSETTS; Illinois to western North Carolina, Oklahoma and South Dakota.

Var. *ELLIPTICA* Wiegand l. c. 417 (1899). *B. elliptica* (Wiegand) Gleason, Ohio Nat. v. 317 (1905).—Extending northeastward to the Ottawa Valley, ONTARIO and QUEBEC, and PRINCE EDWARD ISLAND.

Var. *OLIGODONTA* Fernald & St. John, RHODORA, xvii. 25 (1915).—Brackish or saline shores, MAGDALEN ISLANDS, PRINCE EDWARD ISLAND and MASSACHUSETTS locally inland to western NEW YORK.

**Var. *MINIMA* (Huds.) DC. Prodr. v. 595 (1836). *B. minima* Huds. Fl. Angl. 310 (1762).—Bogs and shallow pools, MAGDALEN ISLANDS to southern NEW HAMPSHIRE and western NEW YORK and northwestward; Europe.

Our only Nova Scotian collection is from LUNENBURG Co.: boggy margins of shallow pools, outlet of Hebb's Lake, Bridgewater.

**B. CONNATA* Muhl.; Fernald, RHODORA, x. 200 (1908). LUNENBURG Co.: wet thickets and swales back of brackish shore of Lahave River, Bridgewater; first station east of southern Maine. Earlier records belong to var. *petiolata* (Nutt.) Farwell.

B. FRONDOSA L., var. *ANOMALA* Porter. YARMOUTH Co.: in *Zostera* litter, gravelly sea-beach, Yarmouth Bar; margin of thicket bordering cobbly beach of Parr Lake; the latter station unusual in being on a fresh-water lake, the variety usually occurring in brackish habitats.

**MEGALODONTA BECKII* (Torr.) Greene. *Bidens Beckii* Torr. DIGBY Co.: deadwater of Rocky Brook north of Hasset; first station east of the Penobscot.

Chrysanthemum Leucanthemum L. The typical form of the species is apparently common at Annapolis Royal and Granville, and pre-

sumably in Annapolis Co.; the common plant generally throughout the province being var. *PINNATIFIDA* Lecoq. & Lamotte.

**Artemisia Pontica* L. Waste ground, Dartmouth.

PETASITES PALMATUS (Ait.) Gray. Very rare in the western counties. Seen by us only at one station in YARMOUTH Co.: sphagnous thicket, Belleville.

SENECIO AUREUS L. Very rare in the western counties; seen by us only at one station in YARMOUTH Co.: sphagnous thicket, Belleville.

LACTUCA HIRSUTA Muhl. Widely dispersed but nowhere abundant in Yarmouth and Shelburne Cos.

PRENANTHES NANA (Bigel.) Torr. YARMOUTH Co.: turf crests and slopes of exposed headlands, Markland (Cape Forchu).

HIERACIUM PANICULATUM L. Occasional from Yarmouth Co. eastward at least to Annapolis and Lunenburg Cos.

***H. paniculatum* × *scabrum*. A large colony exactly combining the characters of *H. paniculatum* and *H. scabrum* and more abundant than either of them, in dry pine and oak woods on steep slopes along Lahave River, Bridgewater, Lunenburg Co.

MUSCARI COMOSUM IN OREGON.

J. C. NELSON.

By a rather startling coincidence, the discovery of *Muscari comosum* (L.) Mill. in the East, as reported by Mr. Long in *RHODORA* 24: 17 ff. (1922), was simultaneous with its first appearance on the other side of the continent. Here also it was first brought to notice by a school pupil. The first specimens were brought to the botany class of the Salem High School in the first week of May, 1921, by Carter Keene, a farmer's son living about sixteen miles north of Salem. A hasty consultation of that invaluable manual, Gray's *Field, Forest and Garden Botany* led us to name it tentatively *Muscari comosum*—a determination afterwards kindly confirmed by Mr. Long, who was about the same time studying the material collected by him at Philadelphia. The "find" was so unexpected that a personal visit to confirm the details seemed in order, and I accordingly accompanied young Keene to his home one Friday afternoon after school. The station in which the plant was growing was about 2½ miles north of Waconda, Marion County, in the northwest corner of a field of some 90 acres belonging to the elder Keene. This field had been sown to oats the previous season; in the fall the stubble had been plowed under and the ground left fallow for the following year.